

Attorney Docket No.: T4903.CIP (UT-0003)
Inventors: Rao et al.
Serial No.: 09/073,881
Filing Date: May 6, 1998
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REMARKS

Claims 1, 15, 17 and 18 are pending in the instant application. Claims 1, 15, 17 and 18 have been rejected. Claims 1 and 15 have been amended. Support for this amendment is provided in Example 18, at page 51. Thus, no new matter is added by this amendment. Reconsideration is respectfully requested in light of this amendment and the following remarks.

I. Rejection of Claims 1, 15 and 17-18 under 35 U.S.C. § 112, second paragraph

Claims 1, 15 and 17-18 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner suggests that the preamble recites a method for generating mammalian neural crest stem cells. However, the Examiner suggests that the step of inducing the NEP cells to differentiate in step (c), "alternatively results in differentiation of these neural crest stems cell and therefore no more generation of NEP cells." The Examiner suggests that this

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is "contradictory to that recited in the preamble."

Applicants respectfully traverse this rejection.

The preamble of the claim is drawn to a method of generating **neural crest stem cells**. Step (c) states that the neuroepithelial stem cells are replated onto a fibronectin substrate and in a media comprising chick embryo extract, NGF, FGF and EGF **to generate neural crest stem cells**. Applicants fail to see how this step is in any way contradictory to the preamble or renders the claims ambiguous.

The essential inquiry with respect to definiteness of a claim under 35 U.S.C. § 112, second paragraph, is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. See MPEP § 2173.02. The test for definiteness under 35 U.S.C. § 112, second paragraph, is whether "those skilled in the art would understand what is claimed when the claim is read in light of the teachings of the specification. See MPEP § 2173.02 and *Orthokinetics, Inc., v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986). The instant claims, drawn to methods for generating neural crest stem cells, which set forth the steps for obtaining and harvesting mammalian

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neuroepithelial stem cells from which the neural crest stem cells are generated and the step for plating the harvested neuroepithelial stem cells in a defined media to generate the neural crest stem cells, provides this understanding of what is being claimed to the skilled artisan.

Accordingly, the pending claims of the instant application meet the requirements of definiteness under 35 U.S.C. § 112, second paragraph. Withdrawal of this rejection is therefore respectfully requested.

II. Rejection of Claims 1, 15 and 17-18 under 35 U.S.C. § 102(e)

The rejection of claims 1, 15 and 17-18 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 5,589,376 and U.S. Patent 5,824,489 has been maintained. The Examiner suggests that both Anderson patents teach in their Examples 1-3 a method for obtaining neural crest stem cells derived from neural tube from a mammalian/rat embryo, dissociating the cells, trypsinizing the cells and plating the cells in culture medium comprising EGF, bFGF and NGF and chick embryo extract (e.g. col. 12 of '376 patent; col. 15, of '489 patent) on fibronectin coated plates.

Applicants respectfully traverse this rejection.

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To anticipate a claim under 35 U.S.C. § 102, a cited prior art reference must teach all the elements of the claimed invention. Neither of the cited prior art patents teach harvesting of mammalian neuroepithelial stem cells by trypsinization **prior to** generation of the neural crest stem cells. As made clear in the instant claims, the methods for generating neural crest stem cells comprise step (a) wherein the neuroepithelial stem cells are obtained; step (b), wherein the neuroepithelial cells are harvested by trypsination; and step (c), wherein the neuroepithelial stem cells are replated onto a fibronectin substrate and in a media comprising chick embryo extract, NGF, FGF and EGF to generate neural crest stem cells. In an earnest effort to emphasize that the trypsinization step occurs prior to generation of neural crest stem cells, Applicants have amended claims 1 and 15 to state that the **harvested** neuroepithelial stem cells are replated onto the fibronectin substrate and in a media comprising chick embryo extract, NGF, FGF and EGF.

In contrast, the trypsinization step taught in the '489 Patent and the '376 Patent is performed after a 24 culture period and after the neural tube is carefully scraped away from the

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neural crest stem cells migrate onto the substrate. See specifically, Example 1 of the '489 patent (col. and Example 1 of the '376 Patent (col. 11, lines 49-53, wherein it is taught that "[c]rest cells were removed by a 2 minute 37°C treatment with 0.05% Trypsin solution (GIBCO)." (emphasis added)

Thus, since the prior art references do not teach harvesting of neuroepithelial stem cells by trypsinization prior to generation of neural crest stems cells via replating of the harvested neuroepithelial onto a fibronectin substrate and in a media comprising chick embryo extract, NGF, FGF and EGF, they do not teach all the elements of the claimed invention. Accordingly, these references cannot anticipate the instant claimed invention. See MPEP § 2131.

Withdrawal of this rejection under 35 U.S.C. § 102 is therefore respectfully requested.

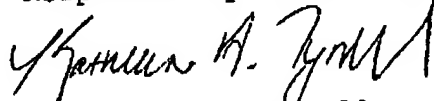
III. Conclusion

Applicants believe that the foregoing comprises a full and complete response to the Office Action of record. Accordingly,

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favorable reconsideration and subsequent allowance of the pending claims is earnestly solicited.

Respectfully submitted,



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